CLAIMS

What is claimed is:

1. An integrated sealed secondary battery comprising:

a plurality of cells arranged in a row respectively accommodating electricity-generating elements within rectangular tubular cases having a bottom, with their upper open ends being sealed;

first cooling medium passages formed on both sides of the row of the cells;

second cooling medium passages formed between the cases of the cells that communicate with the first cooling medium passages on both sides of the row of the cells; and

means for generating pressure difference at both ends of the second cooling medium passages between the cases.

2. The integrated sealed secondary battery according to claim 1 wherein the flow path cross-sectional areas of the first cooling medium passages on both sides are made mutually different.

3. The integrated sealed secondary battery according to claim 1 wherein the width of the second cooling medium passages between the cases is gradually reduced to one side from the other side by making the opposing wall faces of the cases of the cells tapered from one side to the other side.

4. The integrated sealed secondary battery according to claim 1 wherein flow-alignment projecting strips are provided within the first cooling medium passages on both sides of the row of the cells for forming meandering flow passages within the first cooling medium passages, the width

of the opposite cooling medium passages on both sides being made different from each other.

5. The integrated sealed secondary battery according to claim 4 wherein the width of the opposite cooling medium passages on both sides is made different from each other by making the thickness of the wall of the cooling medium passages on both sides different.

6. The integrated sealed secondary battery according to claim 4 wherein the width of the opposite cooling medium passages on both sides is made different from each other by making the height of the flow-alignment projecting strips different.

7. The integrated sealed secondary battery according to claim 1 wherein flow-alignment projecting strips are provided within the first cooling medium passages on both sides of the row of the cells for forming meandering flow passages within the first cooling medium passages, the distance between the flow-alignment projecting strips being made different alternately and between opposite cooling medium passages on both sides.

8. The integrated sealed secondary battery according to claim 1 further comprising distribution headers provided at both ends of the row of the cells for distributing and collecting cooling medium in the first cooling medium passages on both sides, an inlet orifice provided in the distribution header at one end, and an outlet orifice provided in the distribution header at the other end, the distribution headers respectively having connecting ports on

both sides thereof for communicating with the first cooling medium passages on both sides, wherein, at least in one of the distribution headers at both ends, the cross-sectional areas of the connecting ports are made different from each other.

9. The integrated sealed secondary battery according to claim 1 further comprising distribution headers provided at both ends of the row of the cells for distributing and collecting cooling medium in the first cooling medium passages on both sides, an inlet orifice provided in the distribution header at one end, and an outlet orifice provided in the distribution header at the other end, wherein, at least in one of the distribution headers at both ends, the distances from the inlet or outlet orifice to the first cooling medium passages on both sides are made different from ~~each other.~~

10. An integrated sealed secondary battery comprising:

a plurality of cells arranged in a row respectively accommodating electricity-generating elements within rectangular tubular cases having a bottom, with their upper open ends being sealed;

first cooling medium passages formed on both sides of the row of the cells;

second cooling medium passages formed between the cases of the cells that communicate with the first cooling medium passages on both sides of the row of the cells;

projection strips provided in the first cooling medium passages such as to alternately extend downwards from a top

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wall and upwards from a bottom wall of the first cooling medium passages so that the first cooling medium passages meander upwards and downwards; and

air escape apertures formed between the top wall of the cooling medium passages and top ends of the projection strips that extend downwards from the top wall of the cooling medium passages.

11. The integrated sealed secondary battery according to claim 10 wherein inclined faces are formed on the top walls of the cooling medium passages such as to incline towards their sides in at least portions facing the air escape apertures.

12. The integrated sealed secondary battery according to claim 11 wherein the inclined faces are inclined upwards towards both sides from the portion opposite the air escape apertures in the top wall of the cooling medium passages.

13. The integrated sealed secondary battery according to claim 12 wherein the angle of inclination of the inclined faces with respect to the horizontal plane is 3 to 5°.

14. The integrated sealed secondary battery according to claim 10 wherein inclined faces are formed on the top walls of the cooling medium passages such as to incline upwards towards an outlet end from an inlet end of the cooling medium passages.

15. The integrated sealed secondary battery according to claim 14 wherein the height positions of the top ends of the flow-alignment strips that extend downwards from the top walls of the cooling medium passages are set substantially

the same, so that the area of the air escape apertures is made progressively larger from the inlet end towards the outlet end of the cooling medium passages.

16. The integrated sealed secondary battery according to claim 10 wherein the vertical width of the air escape apertures is 3 to 5mm.

17. An integrated sealed secondary battery comprising:

a plurality of cells arranged in a row respectively accommodating electricity-generating elements within rectangular tubular cases having a bottom, with their upper open ends being sealed;

first cooling medium passages formed on both sides of the row of the cells;

second cooling medium passages formed between the cases of the cells that communicate with the first cooling medium passages on both sides of the row of the cells;

projection strips provided in the first cooling medium passages such as to alternately extend downwards from a top wall and upwards from a bottom wall of the first cooling medium passages so that the first cooling medium passages meander upwards and downwards;

air escape apertures formed between the top wall of the cooling medium passages and top ends of the projection strips that extend downwards from the top wall of the cooling medium passages; and

means for generating pressure difference at both ends of the second cooling medium passages between the cases.